

Buffett Undergraduate Research Fellowship Opportunity

Advancing Reliable Health Measurement in Dementia and Cognitive Aging in a Latin American context

Faculty Mentor: Emily Ho, Assistant Professor, Feinberg School of Medicine

Project Synopsis: Already a global challenge, dementia disproportionately affects those from Latin American countries due to a confluence of social determinants of health, including minimal access to health facilities, socioeconomic vulnerability, decreased social/cognitive engagement, and more. While this population is a high-priority area of investigation for advancing equitable global brain health, the dearth of epidemiological information has rendered cross-cultural comparisons difficult. This project will leverage a federally funded study that characterized multidimensional aspects of health (neurocognitive, emotion, sensory, and motor function through a novel iPad assessment, the NIH Toolbox (www.nihtoolbox.org), of which the faculty mentor is the Scientific Director) in a sample of healthy agers and those diagnosed with either Mild Cognitive Impairment or Dementia of the Alzheimer's Type. All participants in the enriched sample are from Latin America. The primary purpose of this project is to examine the extent to which cognitive status differentiates health outcomes such as different facets of neurocognition, emotion (e.g., perceived stress), sensory (e.g., olfaction) and motor (e.g., grip strength), both at baseline and at 12-month follow-up.

The end goals of the projects involve 1) presenting a poster at Northwestern University Feinberg School of Medicine's Global Health Day in the Fall Quarter 2026, giving the selected students opportunities to network with other global health trainees and faculty at the medical school and practice their oral and scientific presentation skills, and 2) submitting a publication reporting on the results of this work in a peer-reviewed outlet such as *Alzheimer's and Dementia* or *Journal of Cross-Cultural Psychology*. A prior Buffett student fellow, under supervision from the faculty mentor, submitted and got a poster accepted for the Alzheimer's Association International Conference in Toronto in 2025.

Project Term: Summer + Academic Year 2026-27

Project Location: Hybrid

Job Description: The student will read and summarize literature on the social determinants of health, extant knowledge of dementia risk and prevalence in Latin American countries, and risk/resilience factors affecting dementia in a multicultural context. They will learn and apply statistical techniques,

including one- and two-way analyses of variance (ANOVAs), effect sizes, linear regression, and related methods. This will include the use, adaptation, and writing of new statistical code using similar open-science published analysis (i.e., see this link for open R code sharing from a published manuscript that the faculty mentor led: <https://osf.io/4rbve/>) to characterize the neurocognitive trajectory of Spanish-speakers with amnestic Mild Cognitive Impairment and Dementia of the Alzheimer's Type, and compare its results with that of a prior published study by the faculty mentor. The student will be mentored through all stages of manuscript preparation, from the Introduction (i.e., literature review) to the detailed reporting of the Methods and Results sections (e.g., producing publication-ready figures and tables). Finally, the Discussion will be written by the student under close mentorship from the faculty mentor. Prior undergraduate mentees of the faculty mentor have typically been able to present their work at regional and national conferences and have additionally been accepted into competitive graduate programs with national fellowships (e.g., NSF GRFP) after graduation.

Time Commitment: 20 hours a week. There will be weekly meetings with the study team that can be attended either remotely or in-person (faculty mentor's office is based on the Chicago campus at 625 N Michigan Avenue).

Number of available positions: Two (one preselected, one open job search)